Oct 11, 1990 10:35 | STEPHEN M. JOHNSON | Chg_Scr

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=> s ram(w)jet?
         44822 RAM
         58422 JET?
L1         148 RAM(W)JET?

=> s l1 and missil?
          6417 MISSIL?
L2          28 L1 AND MISSIL?

=> d cit l2 1-28
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1. 4,944,226, Jul. 31, 1990, Expandable telescoped missile airframe; Larry D. Wedertz, et al., 102/476, 306, 307 [IMAGE AVAILABLE]

2. 4,932,306, Jun. 12, 1990, Method and apparatus for launching a projectile at hypersonic velocity; Josef Rom, 89/8; 102/436, 440, 501, 503 [IMAGE AVAILABLE]

3. 4,916,896, Apr. 17, 1990, Multiple propulsion with quatro vectorial direction system; Marius A. Paul, 60/244, 39.33

4. 4,845,941, Jul. 11, 1989, Gas turbine engine operating process; Marius A. Paul, 60/39.06, 39.36, 735, 744

5. 4,756,154, Jul. 12, 1988, Hot gas flow generator with no moving parts; John E. Minardi, et al., 60/269, 726

6. 4,713,823, Dec. 15, 1987, Pre-combustion integrated Ram airbreathing laser; Eugene A. Smith, 372/90, 58, 77, 701

7. 4,703,694, Nov. 3, 1987, Single stage autophage rocket; Marshall J. Corbett, et al., 102/374; 60/253; 102/348, 364, 515 [IMAGE AVAILABLE]

8. 4,689,950, Sep. 1, 1987, Hot gas flow generator with no moving parts; John E. Minardi, et al., 60/204, 269

9. 4,655,420, Apr. 7, 1987, Low height fin control actuator; Carl M. Spiroff, 244/3.24; 384/491, 510 [IMAGE AVAILABLE]

10. 4,620,679, Nov. 4, 1986, Variable-geometry inlet; Arthur J. Karanian, 244/53B; 137/15.1

11. 4,611,616, Sep. 16, 1986, Axially semisymmetrical supersonic air intake for reaction engines, particularly solid fuel ram jet rocket engines; Wulf-Dieter Pohl, et al., 137/15.1

12. 4,502,651, Mar. 5, 1985, Device for preventing buzz in supersonic intakes of air-breathing reaction engines, particularly, ram jet engines; Gunther Jungclaus, et al., 244/53B; 137/15.1

13. 4,417,441, Nov. 29, 1983, Ram jet engine; Brunhart Crispin, et al., 60/251, 270.1 [IMAGE AVAILABLE]
10:36:13 COPY AND CLEAR PAGE, PLEASE

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11 OCT 90 10:36:23 U.S. Patent & Trademark Office P0004

14. 4,391,094, Jul. 5, 1983, Destructable air inlet cover for rocket engines; Herbert Engel, et al., 60/245, 251 [IMAGE AVAILABLE]

15. 4,384,454, May 24, 1983, Thrust nozzle for rocket engine with ablating lining; Ernst Engl, 60/245, 251, 271, 909; 239/265.15 [IMAGE AVAILABLE]

16. 4,368,620, Jan. 18, 1983, Windmills for ramjet engine; Harry L. Giles, Jr., 60/270.1, 245, 917

17. 4,341,173, Jul. 27, 1982, Hydropulse underwater propulsion system; Allen C. Hagelberg, et al., 114/20.2; 60/221, 245; 114/337; 440/45 [IMAGE AVAILABLE]

18. 4,149,166, Apr. 10, 1979, Doppler countermeasure device; Fay E. Null, 342/13; 102/505; 244/3.27; 342/12 [IMAGE AVAILABLE]

19. 3,976,088, Aug. 24, 1976, Dual side-mounted inlet-vehicle orientation; Arthur J. Karanian, et al., 137/15.1; 60/270.1

20. 3,925,981, Dec. 16, 1975, Gas generator; Alexander Hossen Etessam, 60/39.77, 248, 269

21. 3,841,092, Oct. 15, 1974, REGENERATIVE RAM JET ENGINE; "W" "B" Driver, 60/269, 39.52, 270.1

22. 3,806,064, Apr. 23, 1974, MISSILE CONFIGURATIONS, CONTROLS AND UTILIZATION TECHNIQUES; Arthur R. Parilla, 244/3.22; 60/230, 232, 235, 242, 250, 254, 259; 244/169, 172, 175 [IMAGE AVAILABLE]

23. 3,724,216, Apr. 3, 1973, COMBINED ROCKET-RAM-JET AIRCRAFT; E. Quimby Smith, Jr., 60/245, 271, 917

24. 3,714,863, Feb. 6, 1973, GAS PRESSURE ACTUATORS; John Henry Sindall, 89/1.1, 1.812, 27.13; 102/223, 380 [IMAGE AVAILABLE]

25. 3,708,139, Jan. 2, 1973, MISSILE CONTROL SYSTEM; Phillip R. Wheeler, 244/3.13 [IMAGE AVAILABLE]

26. 3,699,574, Oct. 17, 1972, SCANNED CYLINDRICAL ARRAY MONOPULSE ANTENNA; Francis J. O'Hara, et al., 342/154, 153, 157, 374; 343/705, 768 [IMAGE AVAILABLE]

27. 3,692,258, Sep. 19, 1972, MISSILE CONFIGURATIONS, CONTROLS AND UTILIZATION TECHNIQUES; Arthur R. Parilla, 244/3.21; 60/230, 242 [IMAGE AVAILABLE]

28. 3,690,102, Sep. 12, 1972, EJECTOR RAM JET ENGINE; Anthony A. Du Pont, 60/269, 270.1

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P0007

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US PAT NO: 5,090,102 L2: 26 of 28

ABSTRACT:
A hypersonic ram jet engine is provided which may be of the hydrogen fueled type and in which static and acceleration thrusts are provided as inherent features of the engine to accelerate the aircraft to speeds at which the ram jet engine can operate efficiently. The static and acceleration thrust is provided by the ram jet engine itself; this being achieved by injecting a secondary airflow into the engine at high pressure by the use of the engine's liquid hydrogen fuel to condense secondary air, as will be described.
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=> s 102503/cclr
L3          82 102503/CCLR

=> s 102374/cclr
L4         176 102374/CCLR

=> s 102380/cclr
L5         160 102380/CCLR

=> s l3 or l4 or l5
L6         410 L3 OR L4 OR L5

=> s l6 and (plastic(p)fiber?)
           279782 PLASTIC
        131657 FIBER?
            22273 PLASTIC(P)FIBER?
L7           6 L6 AND (PLASTIC(P)FIBER?)

=> s l6 and (poly?(p)fiber)
      TRUNCATION LIMITS EXCEEDED - SEARCH ENDED

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11 OCT 90 10:46:41 U.S. Patent & Trademark Office P0008

US PAT NO: 4,815,383 [IMAGE AVAILABLE] L7: 1 of 6
US-CL-CURRENT: 102/293, 374

DETDESC:

DETD(3)

The . . . sections made by another method such as extrusion. The material for the molded structure may be any suitable unreinforced or short-fiber reinforced thermoplastic or thermoset plastic material as required by the specific design conditions., The fiber reinforcements may consist of chipped glass or graphite fibers.

US PAT NO: 4,223,606 [IMAGE AVAILABLE] L7: 2 of 6
US-CL-CURRENT: 102/374

DETDESC:

DETD(5)

The . . . The outer shell 56 of the aft closure 42 is preferably constructed of a metallic material such as steel. A plastic congruent second shell 58 is contiguously formed within the metallic first shell 56 and constructed of material such as fiber glass reinforced phenolic having an asbestos filler for heat insulation purposes. The throat 60 of the nozzle 40 is received. . .

US PAT NO: 4,176,607 [IMAGE AVAILABLE] L7: 3 of 6
US-CL-CURRENT: 102/374; 60/909; 220/3

DETDESC:

DETD(3)

A . . . 1 and 2 of the curve are those values determined wit respect of a rocket shell made of a Kevlar fiber (aromatic polyamide made by Du Pont) reinforced plastic (FRP) material alone and a thin metal plate alone, respectively, and the values at intermediate points are those determined with. . .

US PAT NO: 4,010,688 [IMAGE AVAILABLE] L7: 4 of 6
US-CL-CURRENT: 102/483; 60/256; 102/374

DETDESC:

DETD(48)

A . . . rocket motor 206 has a solid propellant grain 210 positioned therein. The solid propellant grain 210 is encased within a plastic tube, for example a polyvinyl chloride tube 212 along the axial peripheral edges 214 thereof and is bonded by, for example, a silicone plastic bond 216 to the rocket motor casing 208. The polyvinyl chloride tube 212 inhibits burning along the axial peripheral edges 214 of the solid propellant grain 210. An inhibitor disc, such as a fiberglass disc 218, is bonded to both the forward and aft end surfaces 220 and 222, respectively, of the solid propellant. . .

US PAT NO: 3,889,462 [IMAGE AVAILABLE] L7: 5 of 6
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11 OCT 90 10:47:41 U.S. Patent & Trademark Office P0009

US PAT NO: 3,889,462 [IMAGE AVAILABLE] L7: 5 of 6
US-CL-CURRENT: 60/250, 254, 256; 102/340, 352, 374, 380

DETDESC:

DETD(8)

FIG. . . . be recognized that is applies equally to multi-stage structures. The wrapping 23 may be of any suitable material such as fiber glass or plastic material or the like, which may, if desired, be applied to the circumference by adhesive. Alternatively, the material 23 could. . .

US PAT NO: 3,628,457 [IMAGE AVAILABLE] L7: 6 of 6
US-CL-CURRENT: 102/374; 60/255

DETDESC:

DETD(3)

The . . . increasing in thickness rearwardly, has proved to be of great significance. Good results have been obtained with tubes made of glass-fiber-reinforced plastic, but tubes made of phenolic-asbestos laminate may also be used as well as tubes made of different metals. The ignitor. . .

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